hemisphere being related to both eyes, so that a unilateral destruction produces bilateral hemiopia. They further show that the cortex of the angular gyrus has nothing to do with vision, but that beneath it passes the visual tract leading to the occipital lobe, injury of which tract was probably responsible for the effects observed by Ferrier (a probable explanation which was first offered by the reviewer, in 1884, in the *American Journal of the Medical Sciences*, and which has met with approval and adoption elsewhere since). These experiments ought to put an end to the controversy, since they bring clinical facts and experimental results into complete harmony.

The results regarding the auditory area are entirely negative. Ferrier located this area in the superior temporal gyrus, but Schäfer and Brown have destroyed this gyrus in six monkeys without in any way affecting hearing. They gently condemn any conclusions as to sensory areas from irritation of the brain, and depend on the results of destruction in their conclusions. It may be stated that very little, if any, reliable clinical evidence can be cited to show that the auditory area in man lies in the first temporal convolution; a case of L. C. Gray's, recently reported, having demonstrated that complete softening of both temporal lobes does not necessarily produce deafness. On the other hand, word-deafness is undoubtedly caused by such lesion in the large majority of cases; and recent anatomical investigations seem to indicate that the intra-axial course of the auditory tract ends in the temporal lobe.

The animals in which the entire temporal lobe was removed showed no evidence of loss of taste or smell.

In regard to these results, it must be stated that they do not harmonize with those of all the other observers, who unite in assigning these functions to the temporal lobe. In regard to tactile sensibility, Schäfer found that removal of the gyrus fornicatus caused hemianæsthesia of the opposite side, except of the forearm and hand in one monkey. This persisted for seven months after the operation. Any conclusion from a single experiment is not, however, warranted.

M. A. S.

THERAPEUTICS OF THE NERVOUS SYSTEM.

ON THE TREATMENT OF HYDROPHOBIA BY HYPOSULPHITES. Dr. A. H. Newth (*Maryland Medical Journal*, March, 1888).

Nearly thirty years ago Professor Polli, of Milan, suggested the use of sulphurous acid in cases of icorrhæmia. He proved by experiment that dogs who had putrid blood injected into their veins quickly died. But if hyposulphite of sodium was previously mixed with the blood they were not affected. Further, if the hyposulphite was administered to the dogs either before or immediately after the injection of putrid blood, they did not suffer.

I have used this remedy repeatedly in cases of blood-poisoning with most marked success. For instance, a patient has received a punctured wound, which has inflamed, the lymphatics have become swollen and reddened, the parts are extremely painful, and there are rigors. Within a short time after the exhibition of the hyposulphites the pain has decreased, the parts are less inflamed, and all the symptoms of poisoning have abated.

I find even children take hyposulphites readily, and I have never met with the slightest unpleasant symptoms from their use. Probably this may in some measure be due to the fact that I am in the habit of prescribing the hyposulphites in combination with bicarbonate of soda and sulphate of magnesia in peppermint-water. For children I simply give it with sirup and caraway-water. I would suggest a fair trial of this remedy, not only when hydrophobia has developed itself, but as a prophylactic. After a bite by a mad dog I would give five or ten grains of the hyposulphite of sodium or magnesium (the latter is richer in sulphurous acid) for the first three or four days every four hours; then three times a day for a week; then twice a day for another week; then every morning early for one month; recommending a Turkish bath twice a week. When the disease has developed I would prescribe the hyposulphite every hour or every two hours, with vapor or dry hot-air baths or prolonged warm-water baths containing some hyposulphite in solution. The hypodermic injection might also be tried, especially if the patient is unable to swallow.

THE TREATMENT OF NEURALGIA IN GENERAL PRACTICE. Dr. Gustavus Elliot, A.M., M.D. (*in a paper read before the Ninth International Medical Congress*, September 8, 1887).

Of all the drugs which have been recommended and tried in the treatment of neuralgia, three are invaluable. They are morphine, quinine, and iron. In acute attacks of marked severity, morphine is almost indispensable. It is preferably administered, if the patient is seen while severe pain continues, by hypodermatic injection. Given by this method, in doses of one-quarter or one-half grain, at the onset, or during the persistence of a paroxysm, the relief which follows is prompt, grateful, and often complete. Thus used, it is always palliative, and sometimes curative, a second attack never occurring.

It is, however, rather unusual to see the course of neuralgia immediately arrested by this treatment, if it is commenced after more than one paroxysm has occurred. In these cases it is desirable to prescribe, if possible, some remedy which is more directly curative. The drug which acts more positively in this direction than any other, which more justly than any other might be called a specific, is quinine. It should be given in large doses, and is of value in all cases, but especially in those which are markedly paroxysmal, and most of all in those which are dependent upon malarial poisoning.

In a considerable proportion of cases anæmia is not a prominent feature. The patients are well-nourished and full-blooded subjects. In them, neuralgia is an expression of an exhaustion of nervous force, perhaps due to cold or to over-exertion ; or of a toxæmia, perhaps malarial ; or of some reflex irritation. In the latter cases, the removal of the source of irritation is, of course, indicated. In the other cases, in connection with proper hygiene, including, as of highest importance, rest and good food, a combination of quinine and morphine is of the greatest value. In such cases, seeing the patient in the interval between the paroxysms—when, of course, the hypodermatic use of morphine is not indicated—it is often convenient to give the two drugs together. One drachm of sulphate of quinine and one grain of sulphate of morphine, having been thoroughly mixed, may be divided into twelve powders. Of these, one may be given two or three hours after each meal, and two (or more, if necessary) at once, one or two hours before the paroxysm is expected.

In another large class of cases anæmia is the predominant characteristic. These cases are often exceedingly obstinate, and likely to recur. For them, no drug is more valuable than iron When given continuously, as the quality of the blood improves, the neuralgic tendency grows weak.

As remedies of secondary value may be classed gelsemium and aconite. They certainly deserve to be ranked as valuable adjuncts to the remedies previously named. The danger of producing unpleasant toxic effects with either drug is, however, so great as to render it inexpedient to rely upon either as a single remedy in ordinary cases. The uncertainty in regard to the strength of the various preparations, as manufactured by different pharmacists, is also so great as to constitute a serious hinderance to the general use of either drug. Furthermore, the varying susceptibility of different patients introduces another element of uncertainty. I desire, however, to bear personal testimony to the utility of five-drop doses of the fluid extract of gelsemium, repeated every four hours, and given in connection with quinine and morphine. These three together will often give most favorable results.

As remedies of the third class may be mentioned arsenic, nux vomica, belladonna, phosphorus, and iodide of potassium. These have long been highly commended. I name them rather in deference to popular opinion than because I consider them of great value. I have used them all, but have failed to obtain with them results which warrant me in commending them. Arsenic, in particular, has been recommended by many authors. I have never seen very marked improvement follow its use. On the contrary, I have seen symptoms of considerable severity develop in spite of its administration in full doses, advised with the hope of preventing the attack. As an adjuvant of iron in cases of anæmia, it is unquestionably of value in curing the anæmia. Thus, indirectly, it may contribute to the cure of neuralgia. Similarly, nux vomica and its alkaloid, strychnine, are of use as stomachic tonics, when the general nutrition is impaired by indigestion.

External applications are of considerable utility as adjuvants to internal medication. Counter-irritants have been largely used. In obstinate cases, particularly of sciatica, blisters and cauterization sometimes do great good. In cases of moderate severity—as in intercostal neuralgia—sinapisms, applied either over the seat of pain or over the origin of the affected nerve, often afford some relief. Various sedative applications have some value as palliatives. I have frequently used a mixture containing one part of oil of gaultheria and two parts of olive-oil, or a combination of equal parts of oil of origanum, tincture of opium, spirit of ammonia, and olive-oil —known as Fahnestock's liniment—warmed and thoroughly rubbed along the course of the affected nerve and its branches, hot flannel being superposed, and have found that either will produce a palliative effect in many instances.